CHAPTER V:

Transportation

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INTRODUCTION

A town's transportation system provides vital links for residents, businesses and industrial firms. The availability of an efficient transportation system is an important consideration for new businesses in their decision to locate or expand facilities. The enhancement of transportation systems is a strategy a town can utilize to attract facilities and expand the tax base. In addition, transportation system choices can have impacts on community character and resources.

Traffic is one of the more visible impacts of land development and economic activity. Traffic generated by residential, commercial and industrial land development not only affects the town's local road network, but also impacts the regional highway system and inter-regional travel. The town must, therefore, determine how its own growth patterns affect travel demands and to what extent the existing local and regional system can accommodate those demands. There needs to be a balance between maintaining community character and roadway efficiency and safety. When indicators of deficiencies such as higher than average accident rates are found to exist at a particular location, roadway improvements may be necessary to ensure safety, even if some sacrifice to community character results.

The intent of this chapter of the master plan is to provide an inventory of the existing road infrastructure, a history of traffic and operational characteristics of the highway network, and to identify desired improvements to the transportation system. It provides an inventory of the existing highway network in the town, including highway classification, traffic volumes, roadway conditions and travel patterns. Issues related to transportation and mobility are discussed including highway policy, travel demand, and non-motorized and alternative modes of transportation. Recommendations to improve the highway network, and mobility in general, are also provided.

HIGHWAY CLASSIFICATIONS

State Aid Classification

The State-aid classification system has been defined by RSA 229 - 231 to determine responsibility for construction, reconstruction and maintenance as well as eligibility for use of state aid funds. The following is a description of the state-aid system:

Class I, Primary State Highway System, consists of all existing or proposed highways on the primary state highway system, excepting all portions of such highways within the compact sections of towns and cities, provided that the portions of turnpikes and interstate highways within the compact sections of those cities are Class I highways.

Class II, Secondary State-Highway System, consists of all existing or proposed highways on the secondary state highway system, excepting portions of such highways within the compact sections of towns and cities.

All sections improved to the satisfaction of the Commissioner are maintained and reconstructed by the State. All unimproved sections, where no state and local funds have been

expended, must be maintained by the town or city in which they are located until improved to the satisfaction of the highway commissioner.

All bridges improved to state standards with state-aid bridge funds are maintained by the State. All other bridges shall be maintained by the city or town until such improvement is made.

Class III, Recreational Roads, consist of all such roads leading to, and within state reservations designated by the Legislature. The NH DOT assumes full control of reconstruction and maintenance of such roads.

Class IV Highways, consist of all highways within the compact sections of cities and towns listed in RSA 229:5, V. The compact section of any such city or town shall be the territory within such city or town where the frontage on any highway, in the opinion of the Highway Commissioner, is mainly occupied by dwellings or buildings in which people live or business is conducted, throughout the year. No highway reclassification from Class I or II to Class IV shall take effect until all rehabilitation needed to return the highway surface to reputable condition has been completed by the State.

Class V, Rural Highways, consist of all other traveled highways which the town or city has the duty to maintain regularly.

Class VI, Un-maintained Highways, consist of all other existing public ways, including highways subject to gates and bars, and highways not maintained in suitable condition for travel for five years or more.

Scenic Roads, are special town designations of Class IV, V, and VI roads where cutting or removal of a tree, or disturbance of a stone wall, must go through the hearing process and written approval of local officials (See RSA 231).

The state aid classification road mileage in Amherst is summarized in Table V-1. There are Class I, II, IV, V, and VI type roads in the town. There are no roads in Amherst classified by the state as Class III (recreational roads). The major source of funding for up keep and maintenance of minor collector roads and local roads comes from the Town of Amherst and the New Hampshire state block grant for roads.

TABLE V-1
STATE AID ROAD CLASSIFICATION IN AMHERST

State Funding Classification	*Mileage*
Class I- Primary State Hwys	11.46
Class II- Secondary State Hwys	6.00
Class IV- Urban Compact	0.15
Class V- Town Roads	116.41
Class VI- non-public roads	5.31
Total	*139.33*

Source: NH Department of Transportation.

As shown in Table V-1, there is a total of 139.33 miles of roads in Amherst. A portion of Amherst Street, beginning a few feet from its intersection with Boston Post Road and running 0.148 miles eastward to a point just beyond the intersection of Courthouse Road, makes up the Class IV Urban Compact highway in Amherst. This section of Amherst Street, and the portion beyond to Baboosic Lake Road, is also designated as Route NH 122 by the state.

The New Hampshire Department of Transportation (NH DOT) also classifies roads and highways into different categories according to their functions as well as their source of funding. The following provides a description of the functional classification system characteristics of a road and highway network:

Functional System	*General Characteristics*
Principal Arterial	1. Provides corridor movement suitable for substantial statewide or interstate travel and provides continuity for all rural arterials which intercept the urban area.. 2. Serves the major traffic movements within urbanized areas such as between central business districts and outlying residential areas, between major intercity communities, or between major suburban centers. 3. Serves a major portion of the trips entering and leaving the urban area, as well as the majority of the through traffic desiring to bypass the central city.
Minor arterial	1. Serves trips of moderate length at a somewhat lower level of travel mobility than principal arterials. 2. Provides access to geographic areas smaller than those served by the higher system. 3. Provides intracommunity continuity, but does not penetrate identifiable neighborhoods.
Collector	1. Collects traffic from local roads and channels it into the arterial system. 2. Provides land access and traffic circulation within residential neighborhoods, commercial and industrial area.
Local	1. Comprises all facilities not on higher systems. 2. Provides access to land and higher systems. 3. Through traffic usage discouraged.

Table V-2 provides a summary of the mileage for roads in the Town of Amherst based on the NH DOT assigned functional classifications. Map V-1 illustrates the functional class of Amherst roadways. Based on the state inventory shown in the table, the Class V town maintained total equals 116.411 miles of roads. However, a separate inventory from the Town of Amherst's pavement management study shows a total of 118.12 miles of Class V town maintained roads. This Class V road inventory documented in the town's pavement management study includes 108.330 miles of paved roads and 9.79 miles of gravel or dirt roads for a total of 118.12 miles.

TABLE V-2
STATE FUNCTIONAL CLASSIFICATION OF AMHERST ROADS

State Functional Classification	State Aid Road Classification					
	Class Mileage	Class II Mileage	Class IV Mileage	Class V Mileage	Class VI Mileage	Totals
Category 02 Principal Arterial (Rural)	8.42					8.42
Category 07 Major Collector (Rural)		5.35		0.16		5.51
Category 08 Minor Collector (Rural)		0.65		10.61		11.25
Category 09 Local Roads (Rural)				95.66	5.31	100.97
Category 14 Principal Arterial (Urban)	1.75		0.15			1.90
Category 14 Principal Arterial (Urban Ramps)	1.29					1.29
Category 17 Collector (Urban)				1.66		1.66
Category 19 Local Roads (Urban)				8.32		8.32
Total	11.46	6.00	0.15	116.41	5.31	139.33

Source: NH Department of Transportation.

Federal Aid Classification

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) significantly restructured the federal-aid transportation program. A description of the various programs follows:

National Highway System (NHS): This program funds projects on the designated national highway system on an 80% federal, 20% state/local basis. Routes 101 and 101A in Amherst have been designated as part of the National Highway System

Surface Transportation Program (STP): This program funds projects chosen by states and localities for any facility with a higher functional classification than rural minor collector. Highways in Amherst eligible under the STP category include Route 101, Route 101A, Route 122, Horace Greeley Road from the Milford town line to its intersection with NH 122, and Boston Post Rd from the Merrimack town line to the Souhegan River. NH 101A is classified as an arterial. NH 122, and Horace Greeley Road are classified as Major Collectors. Boston Post Road is classified as an Urban Collector from the Merrimack town line to the Souhegan River

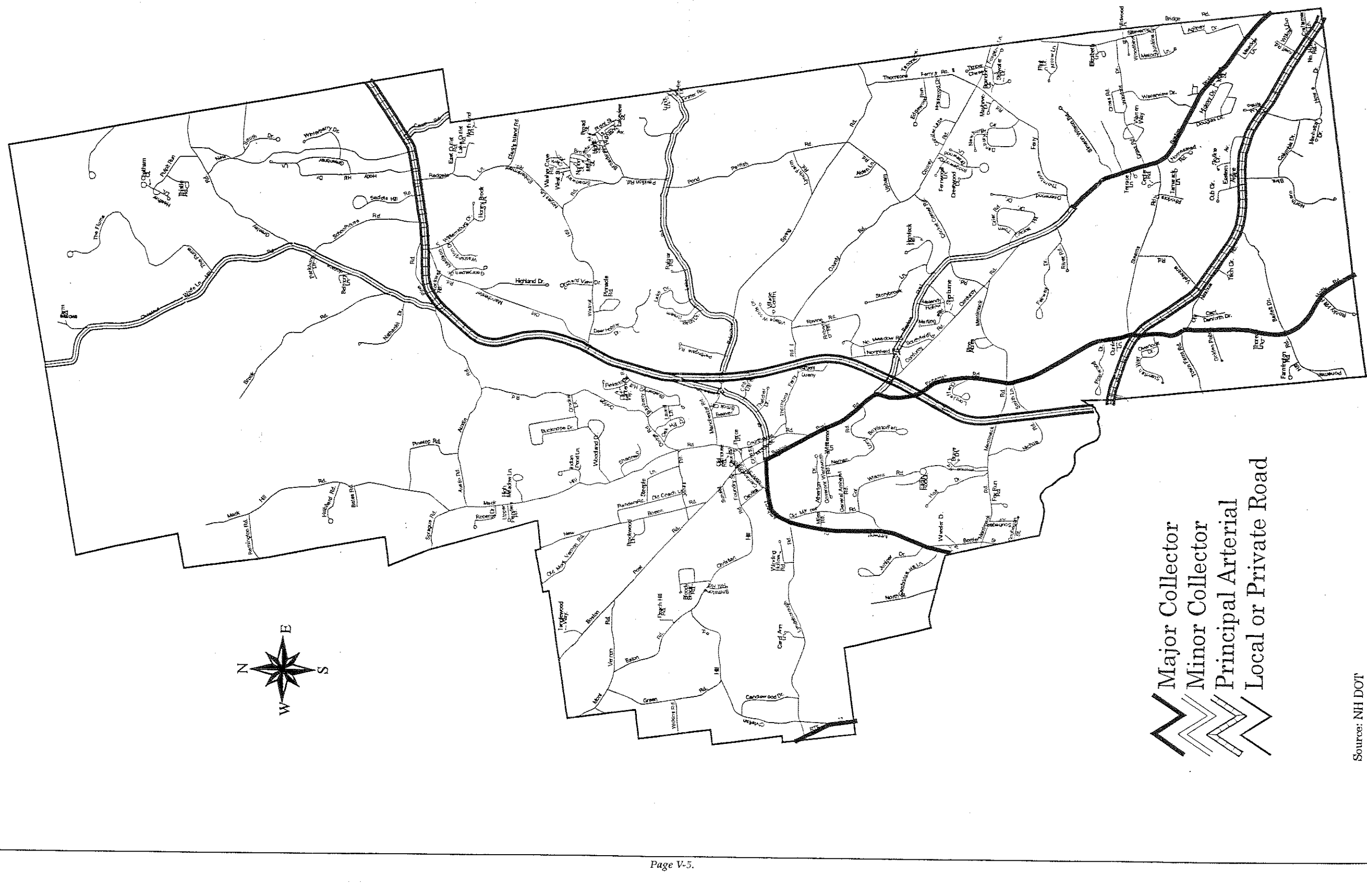
Funding is based upon an 80% federal and 20% state/local share. Projects selected by the Town using their allocated municipal funds or Enhancements require a 20% municipal match. There are four subcategories of STP funds applicable to Amherst, as described below:

A. *STP < 200,000* - This category of STP exists to fund projects in small urban areas with a population under 200,000. There are statewide and municipal apportionments. The Town of Amherst has a modest annual apportionment of $4,800. The accumulated balance available to the Town as of Fiscal Year 1997 is $28,800.

B. *STP Any Area* - This category of STP funds may be used in urban or rural areas. Approximately $5.2 million statewide is apportioned to this category annually.

C. *STP Transportation Enhancements* - This category funds projects submitted by municipalities and chosen through a statewide selection process. Eligible

MAP V-1
FUNCTIONAL CLASSIFICATION OF AMHERST ROADWAYS



Source: NH DOT

Project: (intern) c:\gvprojects\amherst\mptrans

projects include: bicycle and pedestrian facilities, scenic improvements, and preservation of abandoned railroad corridors, historic preservation, rehabilitation of historic transportation facilities and mitigation of water pollution from highway runoff. About $3 million per year is available statewide. In 1997, Amherst submitted an application for the construction of sidewalks in the historic village district. If selected by the review committee for funding, the project could be constructed shortly after the year 2000.

D. *STP Hazard Elimination* - These funds are earmarked for minor projects designed to eliminate hazardous roadway or traffic conditions. There is an annual statewide apportionment of $470,000.

Bridge Rehabilitation and Replacement: This category includes bridges which are on-system, i.e. those that are functionally classified as higher than local, and off-system, which are municipally owned. The 80% federal/20% local share applies to the bridge category.

Congestion Mitigation and Air Quality (CMAQ): CMAQ funds are eligible for transportation related projects in ozone and carbon monoxide non-attainment areas. About $6 million per year is apportioned. Projects must contribute to meeting attainment of national ambient air quality standards, through reductions in vehicle miles traveled, fuel consumption, reduced delay or other factors. Construction of roadway capacity serving single occupancy vehicles is not eligible for CMAQ funding. Funding is 80% federal, 20% state/local.

EXISTING HIGHWAY CONDITIONS

Traffic Volumes

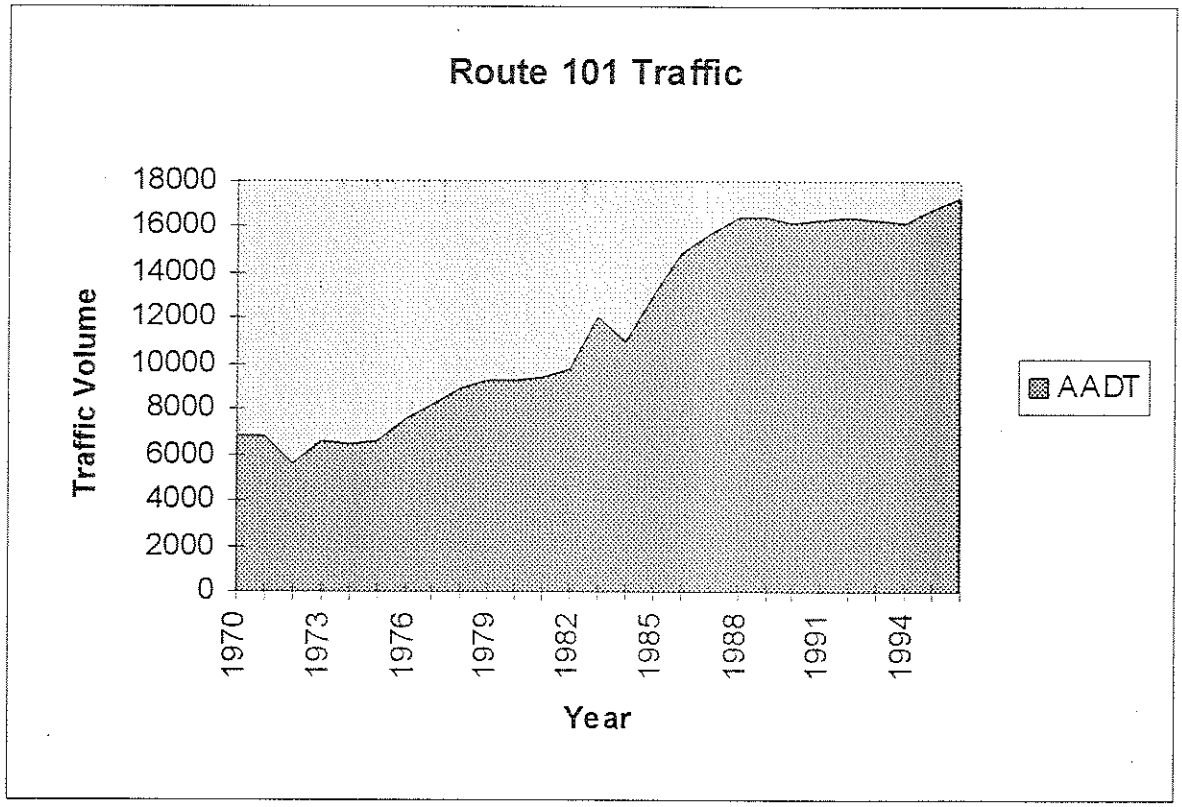
Historic traffic volume data for the Town of Amherst is compiled from several sources. The New Hampshire Department of Transportation (NHDOT) collects traffic counts in accordance with federal guidelines under the Federal Highway Performance Monitoring Program (HPMS.) The HPMS guidelines describe federal procedures for sampling highway and road volumes. These procedures provide the Federal Highway Administration with highway volumes for design standards and meet the Environmental Protection Agency's requirements for estimating vehicular highway travel. In addition to the NHDOT's annual traffic counting program, the Nashua Regional Planning Commission maintains an ongoing traffic count program for validating the region's traffic mode. The NRPC also provides traffic counts for member communities upon request.

A State permanent traffic recorder is located on Route NH 101 just north of Steeple Lane. Historical traffic growth at this location is shown in Table V-3 and illustrated in Figure V-1. Traffic on NH 101 experienced its highest rate of growth between 1982 and 1987. Average annual growth rates since 1989 have reached a plateau until 1995 when the rate increased to 3.7 percent. In a comparison with growth trends at other permanent counting stations in the area for the same period, this growth rate is found to be similar to that of NH 101A in Milford.

The most heavily traveled road in Amherst is NH 101A, which runs east west through the southern section of Town from Merrimack to Milford. NH 101A provides access to Nashua to the east and Peterborough and Keene to the west. Route NH 101 provides access to Manchester and Concord to the north and Milford to the south. In addition, Route NH 122 (Boston Post) and Amherst Street provide access to NH 101A and adjacent communities to the south.

Traffic count data collected at other locations in Amherst are presented in Map V-2 and Table V-5. These counts represent an average weekday (24-hour period) during the May to October traffic counting season and have not been adjusted by a seasonal factor.

FIGURE V-1
HISTORICAL GROWTH TRENDS ON NH 101



Source: NH Department of Transportation.

TABLE V-3
HISTORICAL TRAFFIC GROWTH ON NH 101
NORTH OF STEEPLE LANE IN AMHERST

YEAR	Average Annual Daily Traffic (vehicles per day)	Percent Change
1970	6,797	
1971	6,866	1.0 %
1972	5,593	-18.5 %
1973	6,555	17.2 %
1974	6,470	-1.2 %
1975	6,627	2.4 %
1976	7,538	13.7 %
1977	8,181	8.5 %
1978	8,906	8.9 %
1979	9,301	4.4 %
1980	9,201	-1.1 %
1981	9,265	0.7 %
1982	9,775	5.5 %
1983	11,991	22.7 %
1984	10,986	-8.4 %
1985	13,027	18.6 %
1986	14,813	13.7 %
1987	15,746	6.3 %
1988	16,367	3.9 %
1989	16,402	0.2 %
1990	16,163	- 1.5 %
1991	16,343	1.1 %
1992	16,460	0.7 %
1993	16,265	-1.2 %
1994	16,220	-0.3 %
1995	16,823	3.7 %
1996	17,212	2.3 %
1970 - 1996		*4.1 %*

Source: New Hampshire Department of Transportation.

Highway Capacity Analysis

Using the observed traffic count data, it is possible to evaluate the performance of highway facilities through the use of highway capacity analysis. The principal objective of this procedure is the estimation of the maximum amount of traffic that can be accommodated by a given facility. It not only provides tools for the analysis and improvement of existing facilities, but for the planning and designs of future facilities as well.

"Level of Service" (LOS) is a term which denotes the type of operating conditions which occur along a roadway or at a particular intersection for a given period of time, generally a one-hour peak period. It is a qualitative measure of the effect of a number of operational factors including roadway geometrics, travel delay, freedom to maneuver and safety. Level of service categories for roadway segments and descriptions are explained below.

Level of Service "A" represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Level of Service "B" is in the range of stable flow,

but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is still relatively unaffected.

Level of Service "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. Occasional backups occur behind turning vehicles. Level of Service "D" represents high-density, but stable, flow. Speed and freedom to maneuver are restricted, and the driver experiences a below average level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

Level of Service "E" represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform level. Freedom to maneuver within the traffic stream is extremely difficult, and is generally accomplished by forcing other vehicles to give way. Congestion levels and delay are very high. Level of Service "F" is representative of forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point, resulting in lengthy queues.

Table V-4 indicates the relationship between traffic volumes and level of service for various roadway types. A volume to capacity ratio for the roadway segment is also calculated by dividing the two-way volume into the LOS "E" full capacity volume. Table V-5 provides the daily weekday volumes for Amherst roadways, along with the volume-to-capacity ratios and levels of service.

TABLE V-4
MAXIMUM DAILY TRAFFIC FOR EACH LEVEL OF SERVICE BY ROADWAY TYPE
(Per Two-Way Single Lane Volume)

	LOS A	LOS B	LOS C	LOS D	LOS E
Expressway	10,000	19,000	27,000	32,000	38,000
At-grade Principal Arterial	4,200	7,500	12,000	18,000	28,000
Minor Arterial	4,000	7,000	11,500	17,000	26,500
Major Collector	3,600	6,300	10,400	15,300	23,800
Minor Collector	3,200	5,700	9,400	13,800	21,400
Local (Paved)	2,500	4,500	7,500	11,000	17,000

Source: Derived from procedures in the 1985 Highway Capacity Manual.

MAP V-2
WEEKDAY TRAFFIC COUNTS IN AMHERST

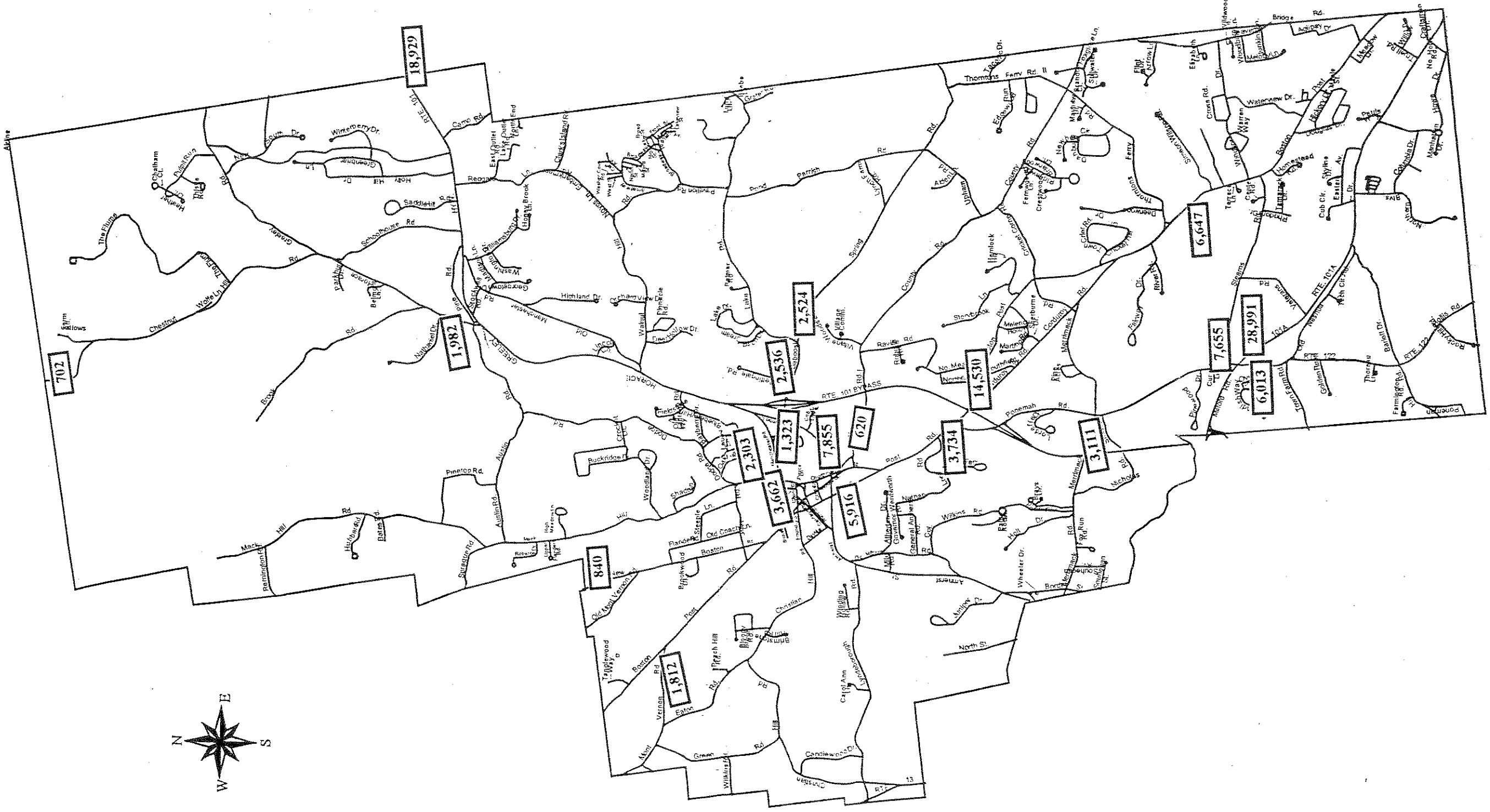


TABLE V-5
EXISTING WEEKDAY TRAFFIC COUNTS AND ROADWAY LEVEL OF SERVICE

Highway	Location	Existing Weekday Traffic	Trend Analysis Period	Average Yearly Change	Vol/ Cap.	LOS
Amherst St.	E. of Courthouse Rd.	7,855	1985-97	0.9%	.33	C
Baboosic Lake Rd.	E. of NH 101 Bypass	2,536	NA	NA	.12	A
Boston Post Rd.	at Souhegan River	6,647	NA	NA	.31	C
Boston Post Rd.	N. of Church St.	3,662	1985-1994	1.6%	.17	B
Chestnut Hill Rd.	at New Boston Line	702	NA	NA	.04	A
Boston Post Rd.	at Beaver Brook	3,734	1984-1993	2.8%	.17	B
County Rd.	at Beaver Brook	620	NA	NA	.03	A
Horace Greeley Rd.	N. of NH 101	1,982	NA	NA	.11	A
Mack Hill Rd.	N. of Manchester Rd.	2,303	1991-1996	1.3%	.14	A/B
Manchester Rd.	E. of Mack Hill Rd.	1,323	NA	NA	.08	A
Merrimack Rd.	W. of NH 122	3,111	1985-1996	4.3%	.15	A/B
Mont Vernon Rd.	W. of Boston Post Rd.	1,812	NA	NA	.08	A
New Boston Rd.	at Beaver Brook	840	NA	NA	.05	A
Spring Rd.	E. of Baboosic Lake Rd.	2,524	NA	NA	.15	B/A
NH 101	at Bedford Line	18,929	1984-1997	3.5%	.54	D
NH 101	N. of Baboosic Lake Rd.	19,692	NA	NA	.56	D
NH 101	Over Boston Post Rd.	14,530	NA	NA	.42	C/D
NH 101A	E. of NH 122	28,991	1983-1996	2.8%	.52	D
NH 122	N. of NH 101A	7,655	1992-1997	3.3%	.32	C
NH 122	S. of NH 101A	6,013	1985-1997	4.1%	.25	B
NH 122	S. of Amherst St.	5,916	1989-1997	3.5%	.25	B

Source: Nashua Regional Planning Commission.

There are no hard and fast guidelines by which communities or transportation officials must select level of service standards. The adopted 1989 Town Transportation Master Plan identified the following as acceptable levels of service for the purpose of permitting new development:

Roadway Type		Location	
Scenic Designation*	Functional Category	Historic District**	Non-Historic District
Non-scenic:	Major arterial Minor arterial Collector Local	C	D
Scenic:	Collector Local	C	C

**Scenic roads are those designated by the Town under RSA 231 as worthy of special consideration because of the scenic resources they traverse.*
***The Amherst Historic District is that area established pursuant to RSA 674:46 and delineated on the Zoning Map currently on file with the Zoning Administrator.*

These levels of service will continue to be the Town's acceptable standards.

Accident Analysis

Accident rates can be measured for intersections based upon the total that is generated per the number of vehicles present. The rate is calculated as the number of accidents per million entering vehicles (MEV) at an intersection. It is recognized that accidents involving personal injury are more symptomatic of serious hazards. Thus, an additional analysis is conducted that weights the personal injury (PI) accidents by a factor of three and adds the figure to the number of property damage-only (PDO) accidents to produce a weighted figure known as the equivalent property damage-only (EPDO) accident total. EPDO rates for road segments and intersections are then calculated in the same manner as are the non-weighted accident rates.

Table V-6 summarizes the accident analysis for the most recent three-year period for the highest accident generating intersections in Amherst. Significantly higher than average accident rates are indicated at the poorly aligned intersection of Route 101A and Route 122, and at the signalized intersection of Boston Post Road and Amherst Street.

TABLE V-6
ACCIDENT RATES AT AMHERST INTERSECTIONS
Average Annual Three Year Accident Summary (1994-1996

Intersection	Int ADT	MEV/ Year	PD	PI	Total		EPDO	Acc/ MEV	EPDO/ MEV
NH 101, Amherst St./Courthouse Rd.	10,800	3.94	1.0	0.7	1.7	=	3.0	0.42	0.76
NH 101, H. Greeley Hwy./Camp Rd.	24,900	9.09	2.7	0.7	3.3	=	4.7	0.37	0.51
NH 101A/NH 101	39,533	14.43	4.0	2.3	6.3	=	11.0	0.44	0.76
NH 101A/NH 122	32,467	11.85	7.3	3.3	10.7	=	17.3	0.90	1.46
NH 101A/Caldwell Dr.	27,800	10.15	2.0	0.7	2.7	=	4.0	0.26	0.39
NH 101A/Northern Blvd.	23,000	8.40	2.7	1.0	3.7	=	5.7	0.44	0.68
NH 122, Bos Post/ Amherst St.	11,467	4.19	4.7	0.7	5.3	=	6.7	1.27	1.59
NH 122, Bos Post/Merrimack Rd.	7,400	2.70	1.3	0.0	1.3	=	1.3	0.49	0.49
Boston Post Rd./Main St.	7,000	2.56	0.7	0.3	1.0	=	1.7	0.39	0.65

Source: Nashua Regional Planning Commission.

Pavement Conditions

The pavement conditions of Amherst's roads were surveyed in 1994 by the Technology Transfer Center at the University of New Hampshire. The survey was performed using Road Surface Management System (RSMS) software, which was developed by the University of New Hampshire for use by small towns. The software allows for an inventory of town roads to be compiled and also documents the condition of road surfaces. The software allows the user to prioritize repairs and will assign a recommended repair strategy for each road or road segment. The serviceability and the cost of maintenance for a road within the initial 75 percent of a pavement's design life is less than one-fifth the cost of maintenance and reconstruction during the final 25 percent of the design life. The purpose of developing a pavement management system is to help the road agent determine when a road has reached that critical 75 percent point.

The reports resulting from the RSMS study are intended to provide assistance in assigning specific repair strategies and prioritizing repair needs. This software system is designed to be flexible and is not intended to take the place of the experience and judgment of the town's department of public works. The RSMS software allows the user to prioritize repairs based on three general weighting factors, which include traffic volume, roughness, and road conditions. The Town has improved pavement conditions along many segments of the roadway system in the last three years and it is anticipated that RSMS will continue to play a major role in determining future repair strategies.

Bridge Conditions

There are twenty-five bridges in Amherst that are regularly inspected by the NH Department of Transportation. The Town of Amherst owns fifteen of the bridges. The State of New Hampshire owns the remainder.

The NH DOT Bridge Design section defines a bridge as "functionally obsolete" when it no longer meets the needs of the highway system due to changes in the highway system. This definition comes from the Federal Highway Administration. A "structurally deficient" bridge is one that no longer meets the needs of the highway system due to structural changes (or deterioration) in the bridge itself. NH DOT classifies two of the twenty-five bridges as "structurally deficient" and five as "functionally obsolete." The two bridges classified as "structurally deficient" are the historic bridge over Beaver Brook and Pine Road over Joe English Brook. The Town owns three bridges and the state owns two that are classified as functionally obsolete. These are the New Boston Road Bridge over Beaver Brook and the NH 122 bridge over the Souhegan River. They are considered "functionally obsolete" because the width of each bridge is not considered adequate for the amount of traffic that passes over each bridge based on standards set by federal highway. Based on the technicalities of the federal standards, New Boston Road over Beaver Brook falls short of the required 24 feet of width for a bridge carrying more than 1,200 vehicles per day (this bridge is 23.9 feet wide) and NH 122 over Souhegan River is 31.3 feet wide but needs 32 feet of width in order to meet the standards for a bridge that carries the amount of traffic on NH 122. Each bridge is structurally sound yet considered functionally obsolete.

A list of the bridges and the status of weight restrictions is provided in Table V-7 based on the New Hampshire Department of Public Work's Bridge Mini-List.

Although the NH DOT inspects all locally owned bridges as well as state bridges, it only recommends a load restriction posting on locally owned bridges. The municipality bears the responsibility for installing signs for the posting of load restrictions, in accordance with NH DOT recommendations.

TABLE V-7
BRIDGE CONDITION REPORT

Bridge	Bridge Number	Owner	Status	Year Built	Date of last Reconstruction
Horace Greeley Rd over Pulpit Brook	060158	Town	Open no restrictions	1992	Replaced 1992
Brook Rd over Joe English Brook	063118	Town	Open-"E-2" Load Restriction	1985	
Horace Greeley Rd over Joe English Brook	087129	Town	Open no restrictions	1989	
Pine Rd over Joe English Brook	092129	Town	Structurally Deficient Bridge Closed	1940	
NH 101 over Joe English Brook	093139	State	Open-"E-2" Load Restriction	1936	1960
Camp Rd over Baboosic Brook	093153	Town	Open-Functionally Obsolete "E-2" Load Restriction	1951	
New Boston Rd over Beaver Brook	109090	Town	Open-Functionally Obsolete	pre-1900	1995
Mont Vernon Rd over Caesar's Brook	112071	Town	Open no restrictions	1956	
Boston Post Road over Beaver Brook	124087	Town	Open-"E-2" Load Restriction	1970	
Boston Post Road over Beaver Brook	132093	Town	Open-"E-2" Load Restriction	1969	
Manchester Rd over Beaver Brook	134100	Town	Open-"E-2" Load Restriction	1980	
Amherst St over NH 101 - span 1	135109	State	Open no restrictions	1969	
Amherst St over NH 101 - span 2	135109	State	Open no restrictions	1969	
Amherst St over Beaver Brook	137104	State	Open no restrictions	1940	
Thornton Ferry Rd over Beaver Brook	145106	Town	Open-"E-2" Load Restriction	1970	
NH 101 over Thornton Ferry Rd	146110	State	Open no restrictions	1971	
Bypassed Historic Bridge over Beaver Brook	159105	Town	Structurally Deficient Bridge Closed	pre-1900	
NH 101 over Boston Post Rd	159107	State	Open-Functionally Obsolete	1969	
Corduroy Rd over Beaver Brook	160105	Town	Open-"E-2" Load Restriction	1984	
NH 101 over NH 122	165104	State	Open no restrictions	1969	
NH 101 over Merrimack Rd	175099	State	Open no restrictions	1969	
Merrimack Rd over Beaver Brook	177108	Town	Open-"E-2" Load Restriction	1986	
NH 122 over the Souhegan River	186107	State	Open-Functionally Obsolete	1956	1996
NH 101 over the Souhegan River	188097	State	Open no restrictions	1971	
Boston Post Rd over Souhegan River	193130	Town	Open-Functionally Obsolete "E-2" Load Restriction	1977	

"E-2" Load Restrictions prohibit crossing by any certified vehicle.

Source: NH Department of Transportation.

TRAVEL PATTERNS

Information on origin and destination patterns for travel to workplace is available from the US Census. Although the 1990 US Census data is now seven years old and total commuter trips have likely risen or changed since that time (due to residential growth and changes in employment), this information represents the latest available data on destination patterns for travel to work. The 1990 US Census data was compared to the data available from the 1980 US Census. The results are summarized in Table V-8.

TABLE V-8
COMMUTING PATTERNS FROM AMHERST

Place of Work	*1980 US Census Number of Amherst Commuters*	*Percentage*	*1990 US Census Number of Amherst Commuters*	*Percentage*
Amherst	502	14.4 %	966	20.2 %
Milford	488	14.0 %	530	11.1 %
Nashua	943	27.0 %	1,210	25.4 %
Hudson	23	0.7 %	151	3.2 %
Merrimack	182	5.2 %	375	7.9 %
Manchester/Bedford	476	13.7 %	484	10.1 %
Massachusetts	220	6.3 %	677	14.2 %
Other New Hampshire	372	10.7 %	379	7.9 %
Not reported	279	8.0 %	–	–
Total	*3,485*	*100 %*	*4,772*	*100 %*

Source: 1990 US Census.

The table shows that the amount of people who both live and work in the Town has increased from 14.4 percent in 1980 to 20.2 percent in 1990 and the overall number has increased from 502 to 966. The percentage of commuters living in Amherst and working in Hudson, Merrimack, and Massachusetts has increased while the percentage of Amherst residents working in Milford, Nashua, Manchester, and other New Hampshire destinations has decreased. The number of commuters overall has increased from 3,485 in 1980 to 4,772 in 1990. This represents an annual increase of 2.2 percent per year for the ten years.

KEY HIGHWAY ISSUES

Access to Roads and Highways

The maintenance of safe and convenient access to roads and highways is an important element of transportation systems planning. To achieve this end, the following standards are recommended:

- The safest possible location for access shall be selected (NH RSA 236:13).
- There must be adequate drainage and grades to permit a safe and controlled approach to the highway in all seasons of the year (NH RSA 236:13).
- For all access points, the following AASHTO standards should be applied:

Type of Road	*Speed Limit, or if None, Typical Speed*	*Minimal Safe Sight Distance*
(a) minor roads	30 mph or lower	200 feet
(b) through roads	31 - 40 mph	275 feet
(c) through roads	41 - 50 mph	350 feet
(d) major roads	50 - 60 mph	475 feet

Right-of-Way and Travelway Width

A right-of-way (ROW) width of 45 feet (minimum) is recommended for all local roads in town, with the exception of private ways and drives. This will allow the upgrading of any roadway, if necessary, should development occur in a manner that was anticipated. It will also allow for the inclusion of pedestrian and bicycle paths, where desired. A greater width may be required for arterial and collector streets.

Travelway width may vary depending on the type of roadway and the nature of the traffic. A minimum single lane width of nine feet is recommended for each direction of traffic traveling at slow speeds. Higher speeds or traffic volumes will require a wider lane width for each lane of traffic. Generally, the centerline of the travelway should coincide with the centerline of the ROW. The fifty-foot minimum ROW, however, not only allows upgrading of the roadway as stated earlier, but also allows for the diversion of the roadway to avoid difficult or sensitive natural formations during the course of construction.

The NH Department of *Transportation* *Minimum Geometric and Structural Guide for Local Roads and Streets* provides more detailed standards, and should be adhered to in street design.

Development Impacts On Roadways

Communities face the problem of having to upgrade the local road network as new development occurs. To the extent that new development projects create a need for improvements, developers should be required to pay their proportion of the cost to implement these improvements. The amount of developer contributions should bear a rational connection to the needs created by and the benefits conferred upon the subdivision.

The Town should form a policy to control and guide future developments along Class VI roads. The Planning Board should consider the effect which proposed subdivisions might have on the roads and require the developer to upgrade the roads as a condition for subdivision approval. Even if the new road in a subdivision meets the Town's specifications, the other roads (especially Class VI roads) in the area may not be adequate to accommodate the increased traffic resulting from the new development. In this case the developer should pay his proportion of the cost to upgrade these off-site roads. In principle, developments along Class VI roads should be disallowed.

Scenic Road Designation

As New Hampshire's residential, commercial and industrial development has grown, so has the need to improve the road system, thereby reducing the number of country roads that constitute an important asset to the State. To prevent the elimination of scenic roads, communities are enabled by State legislation to designate roads other than state highways as Scenic Roads. This Law protects such roads from repair or maintenance, which would involve the cutting or removal of medium and large-sized trees, except with the written consent of an official body. The law is an important tool in protecting the scenic qualities of roads. The large trees and stone walls that line many rural roads are irreplaceable and contribute heavily to the New England character of the region's towns.

The following have been officially designated as Scenic Roads by the Town:

Austin Road - all
Baboosic Lake Road - from Pavillion Road to the Merrimack Town Line.
Brook Road - all
Chestnut Hill Road - all except the section from Horace Greeley Road northerly about 2500'.
Christian Hill Road - from Eaton Road to the Milford Town Line.
Colonel Wilkins Road - all
County Road - from Ravine Road to the Souhegan River.
Dodge Road - from the Town Barn north to Austin Road.
Eaton Road - all
Green Road - all
Lynch Farm Road - all
Lyndeborough Road - all
Old Milford Road - all
Pond Parrish Road - all
Ponemah Hill Road - from Route 122 to the Milford Town Line.
School House Road - all
Spring Road - all except the section from Baboosic Lake Road easterly approximately 1000'.

Cul-De-Sacs

Cul-De-Sacs can be an integral part of an efficient road network if properly designed. If improperly designed, cul-de-sacs can lead to an inefficient road system and level of service problems on collector roads. One of the many issues raised when reviewing plans with cul-de-sacs is whether the road should extend to the property boundary. The Planning Board should encourage cul-de-sacs to the property edge to have less curb cuts off of major routes or where a future possible connection may be appropriate for establishing an efficient road network in Town. The Planning Board should discourage cul-de-sacs to the property boundary in the following situations:

- Where the cul-de-sac would be between two zones. For example, a through road leading from a residential zone to a commercial zone may not be appropriate. A through road may encourage truck traffic and patrons to drive through a residential neighborhood to get to the commercial area.

- Where extending it would produce a dangerous intersection.

- Where it is coming off of an existing cul-de-sac. This may produce long cul-de-sacs, when an option of building a proper road network exists.

- Where an extension of the cul-de-sac to abutting property would not be feasible due to steep slopes, major wetland areas or other natural features of the land.

- Where an extension would lead to property, which would be better, serviced from another road.

School Access

Future expansion of the Middle School and High School will impact immediate roadways, including Boston Post Road, Windsor Road, Stearns Road and Cross Road. A traffic engineering study will be conducted to identify potential solutions to higher traffic levels. A turning lane on Boston Post Road to the High School is one measure that is currently being considered. There may also be traffic demand management actions that can be employed, such as staggering the hours of arrival/departure for Middle School and High School students.

Road Salting

The Town has an official policy of minimizing the use of road salt on town maintained roads. A salt/sand mixture is used and it is left to the discretion of the Director of Public Works to determine how much salt is necessary to provide properly maintained roadways for the given weather conditions.

Emergency Access and Management Plan

According to the Fire Chief, the Town does not have a plan or policy for providing emergency access routes to developed arterial corridors and is of the opinion that emergency routes are not needed, since adequate access now exists. It is recommended that the Town consider the need for such routes in the future as development proceeds.

In times of crisis, the Town operates in accordance with its Emergency Operations Plan (EOP). The specific responsibilities of various departments and agencies, and their appropriate course(s) of action for a wide variety of crises, is detailed in the EOP. The plan is kept current and is reaffirmed by the Selectmen annually. The plan is available for public inspection at the Amherst Fire Department Central Station.

FUTURE TRAFFIC FORECASTS

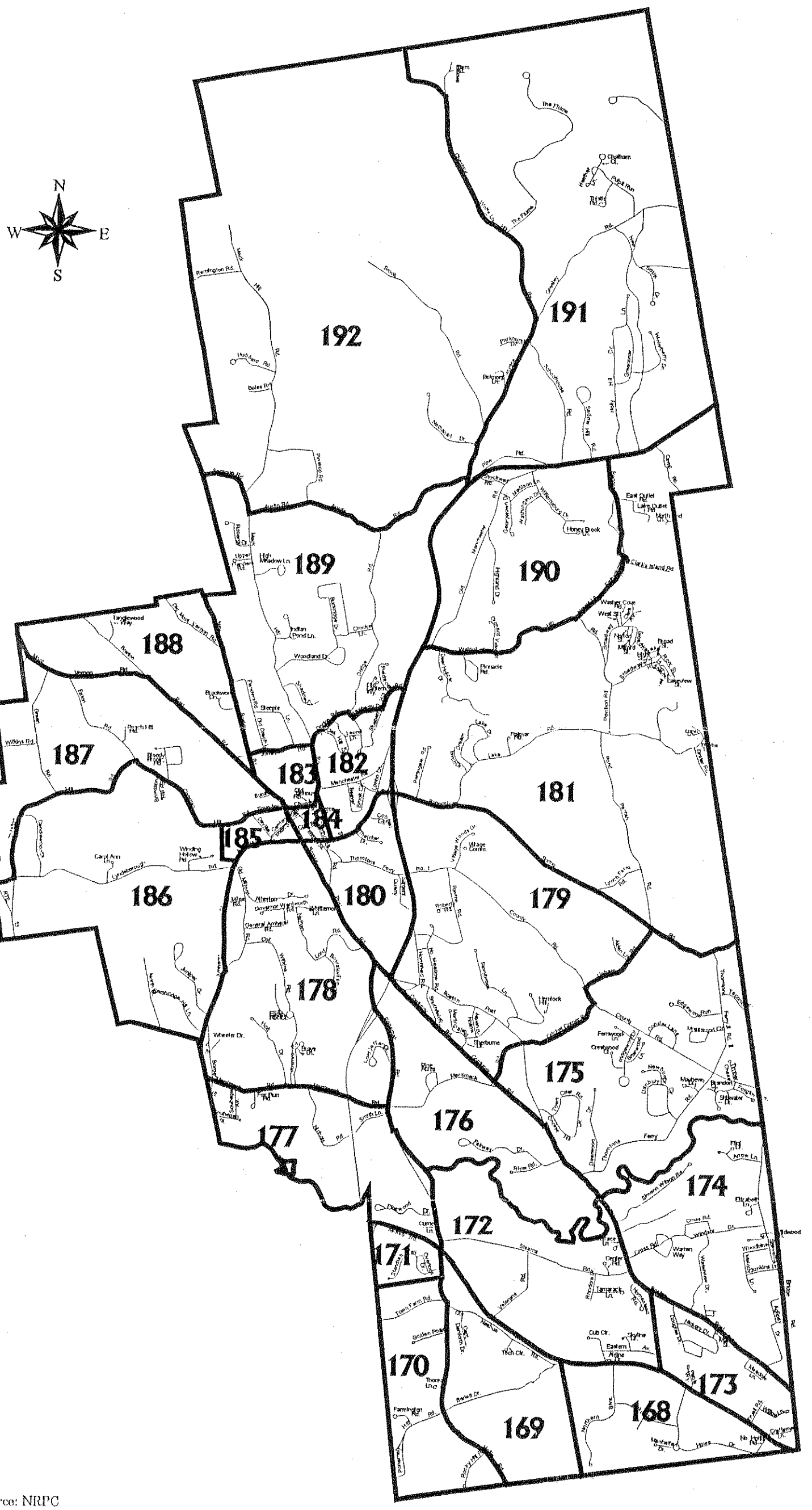
Analysis Methodology

Future traffic volumes were projected to the year 2020, utilizing the NRPC regional traffic model and incorporating forecasts made by the NRPC, in conjunction with local planners, regarding land use growth within the study area. The traffic model converts land use inputs - specifically the number of housing units, employment and school enrollment - into vehicle trips based on pre-determined trip generation equations. The equations were developed based upon a regional home-interview survey that produced specific trip generation data for this region. The trips were then distributed throughout the regional study area and beyond utilizing a "gravity" dispersal model. Each municipality is divided into a number of subareas known as traffic analysis zones (TAZ). All land use data are entered, and vehicle trips are produced, at the TAZ level. All trip distribution also occurs between TAZs. Map V-3 illustrates the traffic analysis zone boundaries for Amherst.

Developable Land

An estimate of remaining developable land in Amherst was conducted by the NRPC in consultation with the Amherst Town Planner through an analysis of development constraints.

MAP V-3
AMHERST TRAFFIC ANALYSIS ZONES



Source: NRPC

Project: (Intern) c:\avprojects\amherst\mptrans

These constraints are general landscape conditions that may pose a barrier to using land for residential, commercial or industrial development. The restricting factors for future development are detailed in the Land Use section.

Table V-9 summarizes the results of this analysis by Amherst TAZ and type of zoning. About 3,400 developable acres are available for residential development. At the current zoning densities for each residential zone, it would be possible to construct about an additional 1,370 residential units in Amherst. About 71 acres are available for industrial development, with the bulk of this property being in zones 168 and 169. There are 12 developable acres of land zoned for general office use within zones 169 and 182. About 16 developable acres of commercial land are available, the majority being within zone 173.

TABLE V-9
REMAINING DEVELOPABLE AREA WITHIN AMHERST BY ZONE

	Total	Devel-	Total	Vacant	Unconstrained Vacant Area (Acres)								
TAZ	Area (Acres)	oped Area	Vacant Area	Con-strained	Total Area	Res Rural	His-toric	No. Res.	No. Trans	Ltd Com	Ind	Gen Ofc	Com
168	446.8	315.5	131.3	76.2	**50.1**	-	-	-	-	-	50.1	-	-
169	510.5	332.4	178.1	55.0	**111.9**	89.1	-	-	-	-	17.1	2.5	3.2
170	434.2	346.4	87.8	35.0	**48.0**	48.0	-	-	-	-	-	-	-
171	97.3	97.3	-	-	-	-	-	-	-	-	-	-	-
172	762.1	617.4	144.7	78.4	**60.3**	55.6	-	-	-	-	3.4	-	1.3
173	283.1	224.4	58.7	11.7	**42.7**	31.3	-	-	-	-	-	-	11.4
174	802.3	548.4	253.9	149.1	**95.3**	95.3	-	-	-	-	-	-	-
175	1,170.0	862.3	307.7	143.3	**149.5**	149.5	-	-	-	-	-	-	-
176	662.5	531.1	131.4	100.5	**28.1**	28.1	-	-	-	-	-	-	-
177	594.7	368.1	226.6	226.6	-	-	-	-	-	-	-	-	-
178	1,000.4	609.1	391.3	170.3	**200.9**	195.9	5.0	-	-	-	-	-	-
179	1,210.4	481.5	728.9	436.5	**265.8**	265.8	-	-	-	-	-	-	-
180	291.7	231.5	60.2	7.0	**48.4**	37.9	10.5	-	-	-	-	-	-
181	2,593.1	1,172.4	1,420.7	866.1	**504.2**	504.2	-	-	-	-	-	-	-
182	239.3	215.2	24.1	6.0	**16.5**	5.9	1.2	-	-	-	-	9.4	-
183	90.7	90.7	-	-	-	-	-	-	-	-	-	-	-
184	34.8	34.8	-	-	-	-	-	-	-	-	-	-	-
185	68.2	54.9	13.3	2.4	**9.9**	7.8	2.1	-	-	-	-	-	-
186	1,175.5	607.0	568.5	260.1	**280.4**	276.2	4.2	-	-	-	-	-	-
187	806.2	421.1	385.1	139.1	**223.6**	223.6	-	-	-	-	-	-	-
188	487.6	278.3	209.3	96.6	**102.5**	102.5	-	-	-	-	-	-	-
189	1,291.3	853.8	437.5	142.3	**268.4**	118.2	-	150.2	-	-	-	-	-
190	838.9	369.4	469.5	389.1	**73.1**	68.9	-	0.4	-	3.8	-	-	-
191	2,544.5	2,106.2	438.3	288.6	**136.1**	0.3	-	36.8	98.9	0.1	-	-	-
192	3,624.7	2,297.5	1,327.2	549.4	**707.1**	-	-	706.7	0.4	-	-	-	-
Total					*3,422.8*	*2,304.1*	*23.0*	*894.1*	*99.3*	*3.9*	*70.6*	*11.9*	*15.9*

Source: Nashua Regional Planning Commission.

Projected 2020 Land Use

Table V-10 presents the projected growth in land use inputs now being used for developing future traffic estimates. These projections were developed based upon the constraints analysis shown in the previous table, long-term trends in housing development patterns and likely commercial/industrial development types for the remaining available areas. The Amherst Town Planner provided valuable input in this growth analysis. However, it must be recognized that the regional economy is constantly changing and future trends will significantly impact the projected totals. Also, changes in zoning or variances granted could result in changes to the market forecasts.

A total of 890 additional housing units is estimated for Amherst by 2020, representing a 26% increase from the 1996 total. Trade employment, comprised primarily of workers in retail establishments along Routes 101A and 101, is estimated to grow by 13% to nearly 1,000 by 2020 and non-trade employment is projected to increase 8% to nearly 3,000.

TABLE V-10
2020 ESTIMATED HOUSING UNITS AND EMPLOYMENT
BY AMHERST TRAFFIC ANALYSIS ZONE

	Housing Units			Trade Employment			Non-Trade Employment		
	1996	2020	Percent Change	1996	2020	Percent Change	1996	2020	Percent Change
168	3	3	0.0%	400	430	7.5%	1200	1260	5.0%
169	29	49	69.0%	15	30	100.0%	285	325	14.0%
170	105	125	19.0%	0	0	0.0%	10	10	0.0%
171	0	0	0.0%	25	25	0.0%	200	210	5.0%
172	228	253	11.0%	110	140	27.3%	150	160	6.7%
173	68	78	14.7%	70	90	28.6%	190	200	5.3%
174	289	334	15.6%	15	15	0.0%	100	105	5.0%
175	293	368	25.6%	0	0	0.0%	20	20	0.0%
176	65	75	15.4%	10	10	0.0%	10	10	0.0%
177	95	95	0.0%	0	0	0.0%	30	30	0.0%
178	287	377	31.4%	10	10	0.0%	0	0	0.0%
179	237	297	25.3%	0	0	0.0%	10	10	0.0%
180	54	74	37.0%	0	0	0.0%	5	5	0.0%
181	338	468	38.5%	10	10	0.0%	20	20	0.0%
182	84	84	0.0%	25	25	0.0%	75	135	80.0%
183	32	32	0.0%	0	0	0.0%	250	265	6.0%
184	66	66	0.0%	15	15	0.0%	30	30	0.0%
185	35	35	0.0%	15	15	0.0%	0	0	0.0%
186	171	251	46.8%	0	0	0.0%	5	5	0.0%
187	136	226	66.2%	0	0	0.0%	5	5	0.0%
188	64	94	46.9%	0	0	0.0%	5	5	0.0%
189	241	281	16.6%	0	0	0.0%	15	15	0.0%
190	130	150	15.4%	150	165	10.0%	125	130	4.0%
191	220	255	15.9%	0	0	0.0%	10	10	0.0%
192	138	228	65.2%	10	10	0.0%	10	10	0.0%
TOTAL	*3,408*	*4,298*	*26.1%*	*880*	*990*	*12.5%*	*2,760*	*2,975*	*7.8%*

Source: Nashua Regional Planning Commission.

Running the regional traffic model with the 2020 regional land use forecasts produces weekday traffic forecasts for Amherst shown in Table V-11. Along Route 101A a 40% increase is projected from 29,000 to 40,600 daily vehicles, resulting in a lowering of LOS to "E". Continued high growth along Route 101 is projected, with traffic rising by over 50% near the Bedford line to a level of 28,800. LOS "E" is also predicted for that location. Collector roads such as Route 122 and Boston Post Road may experience increases in the 75% to 80% range. A number of lower facility roadways such as Baboosic Lake Road and Merrimack Road are also expected to experience high rates of traffic growth. This will likely have an adverse impact on their existing function as rural roadways.

TABLE V-11
FORECASTED 2020 WEEKDAY TRAFFIC COUNTS AND ROADWAY LEVEL OF SERVICE

Highway	*Location*	*1997 Weekday Traffic*	*2020 Weekday Traffic*	*Percent Change*	*Vol./ Cap.*	*LOS*
Amherst St.	E. of Courthouse Rd.	7,850	10,500	33.8%	.44	D/C
Baboosic Lake Rd.	E. of NH 101 Bypass	2,550	5,050	98.0%	.24	B
Boston Post Rd.	at Souhegan River	6,650	11,800	77.4%	.55	D
Mack Hill Rd.	N. of Manchester Rd.	2,300	4,100	78.3%	.24	B
Merrimack Rd.	W. of NH 122	3,100	6,900	122.6%	.32	C
NH 101	at Bedford Line	18,950	28,800	52.0%	.82	E
NH 101	N. of Baboosic Lake Rd.	19,700	27,800	41.1%	.79	E
NH 101A	E. of NH 122	29,000	40,600	40.0%	.73	E
NH 122	N. of NH 101A	7,650	12,300	60.8%	.52	D
NH 122	S. of Amherst St.	5,900	10,700	81.4%	.45	D/C

Source: Nashua Regional Planning Commission.

NON-MOTORIZED TRANSPORTATION

The rapid rate of growth within Amherst has resulted in greater demands being placed on Town roads, since the majority of Amherst residents choose vehicular travel for most travel purposes. To accommodate this increased demand and to preserve the rural environment which residents favor, steps should be taken to provide citizens with the opportunity to use a variety of travel modes for work and non-work travel. In particular, walking and bicycling are viable options for a community such as Amherst. Alternative travel options may particularly benefit those who are not able or willing to drive, such as children, the elderly, and the disabled.

In 1995 the Town of Amherst, as part of the region's Metropolitan Planning Organization, endorsed the NRPC Region Bicycle & Pedestrian Plan (RBPP) which was created to develop and implement a comprehensive bicycle and pedestrian system within the region. The primary goals of the plan are to increase the incidence of bicycling and walking by establishing a continuous, coordinated nonmotorized transportation network and by creating a traveling environment in which bicycling and walking are attractive alternatives. The RBPP recommends physical and institutional improvements as well as a nonmotorized network comprised of local and state roads on which bicycle and pedestrian improvements should be focused.

The key recommendations of the RBPP are to:

- Use the existing and planned street system to the maximum extent possible, consistent with safety considerations, for bicycle travel. The preferable facility for bicycle travel is a four-foot paved shoulder on existing roads, separated from motorized travel lanes by a 6 to 8 inch painted white stripe. Paved shoulders will serve the needs of all nonmotorized users and minimize acquisition and construction costs, and are especially appropriate for the rural roads located in Amherst. Shared roadways, with appropriate signage and safety improvements, are recommended where paved shoulders and bicycle lanes are not possible. "Bike Route" signage is recommended for all nonmotorized road segments.

- Install five-foot sidewalks on both sides of arterial roads where possible. These facilities are desirable on high-volume corridors to improve walking safety. Sidewalks are also desirable on at least one side of collector roads. For rural and low-volume routes, paved shoulders may be used by both pedestrians and bicyclists.

- Provide pedestrian crossings at high-volume intersections on all arterial roads.

- Establish a regular nonmotorized facility maintenance program. This program would include regular inspection of facilities to identify hazardous conditions, road shoulder sweeping, and maintenance of facilities based on safety considerations.

- Adopt land use strategies which facilitate nonmotorized travel. Strategies such as encouraging mixed-use development, programming nonmotorized improvements into the local Capital Improvements Program, requiring nonmotorized improvements as a part of development approval, and adopting bicycle- and pedestrian-friendly design standards would result in a more attractive traveling environment for nonmotorized modes.

- Implement nonmotorized educational programs in schools. This program would teach children basic principles for safely sharing roadways with vehicles and would ideally incorporate on- and off-road training time. A key component of this program is teaching the importance of wearing bicycle helmets.

The Amherst nonmotorized network adopted by Town officials is shown in Map V-5. All state highways in Amherst, including Route 101A; 122; 13; and 101, were designated as part of the system. Local roads include Boston Post, Mont Vernon, Baboosic Lake, Camp, County, Thornton Ferry, and Merrimack Roads as well as Amherst Street. These routes were selected to provide for regional nonmotorized travel; additional roads may be identified to provide for local travel. It is important to note that the Amherst Planning Board is strongly opposed to any bicycle facilities on Route 101A due to high traffic volumes, numerous curb cuts, and perceived limited right-of-way; the Town has stated that it wishes to preserve its options to design and acquire funds for an alternate parallel corridor.

As part of the study, an inventory was conducted from July to September 1994 to assess the suitability of each road for bicycle and pedestrian travel. The highlights of this survey are shown in Table V-12; complete results are available in the RBPP's *Technical Supplement* and an analysis of the routes is available on page 36 of the plan.

TABLE V-12
INVENTORY OF AMHERST NONMOTORIZED NETWORK

Road Section*	Road Type (1)	Speed Limit	ADT (2)	Pavement Condition (3)	Grades (4)	Right of Way (5)
101/H. Greeley - Blue. Hill to Town Line	2LU	50	932	G	M	E
101A - 122 to Merrimack Line	4LU	40	26,144	G	F	E
101A - Milford Line to 122	4LD	35	N/A	G	F	E
122 - 101/Amherst Street to Hollis Line	2LU	40/35	4,400	F	M	L
Rte 13	2LU	40	N/A	G	S	E
Amherst Street - 122 to H. Greeley Hwy.	2LU	40	6,022	G	S	A
Amherst Street - Milford line to 122	2LU	40/35	4,940	F	M	A
Baboosic Lake - Merr. Line to Amherst St	2LU	30	1,628	G	E/M	A
Boston Post - Amherst St. to Northfield	2LU	40	N/A	F	S	L
Boston Post - M. Vernon to Amherst St.	2LU	30	5,217	G	S	A
Boston Post - Northfield to Merr. Line	2LU	30	4,485	G	S	A
Camp Road	2LU	20	1,682	F	M	A/L
County Rd. - Merr. Line to Thorn. Ferry	2LU	30	2,866	F	S	A
Merrimack Rd. - 122 to Milford Line	2LU	30	3,011	G	M	L
Merrimack Rd. - Boston Post Rd. to 122	2LU	30	1,664	G	M	A
Mont Vernon Rd. - Town line to B. Post	2LU	30	1,267	G	M	A
Spring Rd.	2LU	30	1,679	F/G	S	A
Thorntons Ferry - County to Bost. Post	2LU	30	429	G	S	A
	(1) Type of Road		(2) ADT	(3) Pavement	(4) Grades	(5) ROW
*Italics indicate a road originally	2L = 2 Lanes		Average	G = Good	F = Flat	E = Extensive
surveyed which was not included in	U = Undivided		Daily	F = Fair	S = Slight	A = Adequate
final network.	D= Divided		Traffic	P = Poor	M=Moderate	L = Limited
	OW = One way				E = Extreme	

Source: Nashua Regional Planning Commission.

POTENTIAL ARTERIAL HIGHWAY IMPROVEMENT PROGRAMS

Route 101A

The Townwide Transportation Master Plan for Amherst produced in 1989 provided the following recommendation for the Route 101A corridor:

> *It is recommended that the Town of Amherst cooperate and coordinate with the NHDOT and neighboring communities to locate an acceptable corridor for a Route 101A Bypass highway. Alignments that are situated south of existing Route 101A are to be preferred over more central locations. It is not recommended that local roads be upgraded in lieu of a new bypass facility.*

The State of New Hampshire at the time was developing a plan to construct a new limited access Route 101A Bypass from Route 101 in Milford to the F.E. Everett Turnpike in Nashua.

The proposed Circumferential Highway interchange at Exit 9 of the turnpike was intended to be the eastern terminus of the bypass. Following further study, a new alternative was proposed for a highway corridor along the existing railroad bed that runs along the south side of Route 101A. The highway was to run from the junction of Route 101A/Old Nashua Road in Amherst to the 101A/Somerset Parkway intersection in Nashua.

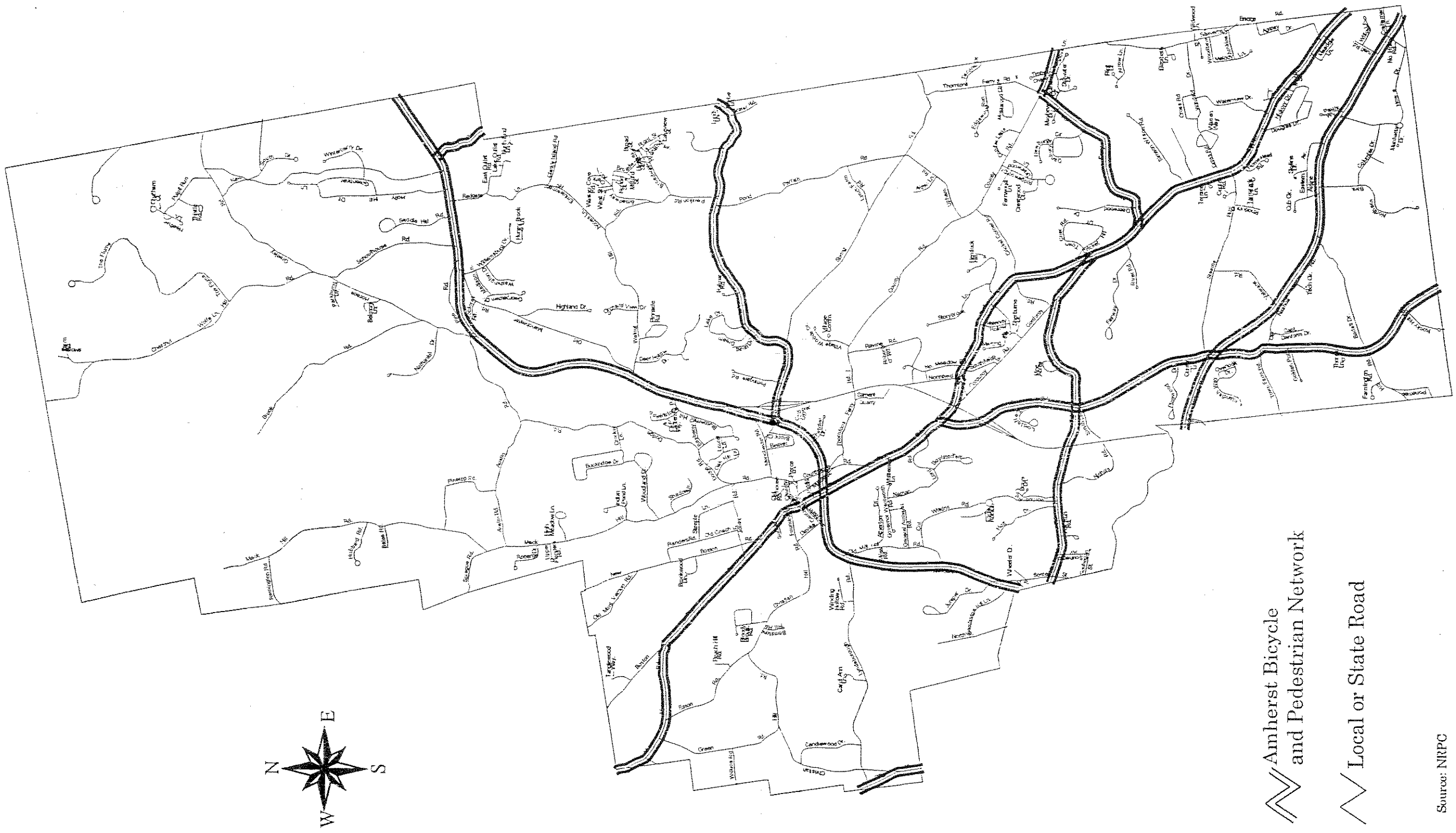
There now appears to be a reduced need for the construction of a new bypass highway. First, the opening of the Turnpike Exit 8 in 1998 has resulted in approximately a 25% reduction in traffic on Route 101A east of Somerset Parkway. The opening of the Camp Sargent Road Bypass in 1994 has also diverted some of the traffic on Route 101A east of Pennichuck Square. Also, the NRPC has lowered its estimates of future traffic growth for the regional highway network. Traffic volume is projected to continue to increase along Route 101A moderately by about 30% over the twenty-year period to a volume of about 55,000 per day west of the turnpike Exit 7 interchange. The highway would operate at about full capacity, indicating the need for improvements, but not necessarily the construction of a new facility.

Consequently, the recommended program for the Route 101A has been modified to an upgrade of the existing highway. The first step is ongoing, entailing the implementation of a coordinated signal system under the CMAQ program.. Four intersection upgrades will also be undertaken under this project, at the junctions of Route 101A with Profile Circle, Sunapee Street, Greystone Plaza and Naticook Road.

NHDOT has programmed $16 million in its transportation program for a longer-range upgrade of the corridor. At present, only intersection improvements have been defined in the project. However, the project could ultimately include any or all of the following components, as they are determined to be needed and are feasible:

- Consolidation of driveway access, interconnections between adjacent parcels and construction of parallel frontage roads, where possible. A frontage road along the south side has been started by Wal-Mart. This can eventually be extended back toward the industrial park and to other commercial areas along Route 101A.

MAP V-4
RECOMMENDED AMHERST NON-MOTORIZED NETWORK



- Construction of a park-and-ride lot on Route 101A near the Route 101 interchange. This would be used by drivers traveling east on 101A as well as those commuting to Manchester and other areas via Route 101.

- Extension of the center median and provision of additional jug-handles in order to consolidate left-turn activity along the corridor and thereby increase the effective capacity of intersections. It may be possible to eliminate some traffic signals through this action.

- Increase the capacity at deficient intersections through provision of additional turn and/or through lanes.

- Provide additional travel lanes along deficient corridor segments, where possible.

Route 101

The following recommendation was provided in the Townwide Transportation Master Plan for Amherst for the Route 101 corridor:

> *It is recommended that the Town of Amherst, in cooperation with neighboring towns, the Nashua Regional Planning Commission, and the Southern New Hampshire Regional Planning Commission, assign its highest priority to evaluating with the NHDOT the feasibility of widening Route 101 to a four-lane cross-section (or three-lane cross-section if right-of-way constraints exist at some locations).*

The NRPC followed through on this recommendation by evaluating the need for a four-lane facility in its 1992 Nashua Area Transportation Study (NATS) Update. NATS predicted a year 2012 traffic volume of 26,400 on Route 101 at the Bedford line, compared with a projection of 31,000 in the Townwide Transportation Master Plan. NATS reached the following conclusion, which became a component of the Regional Transportation Plan Update the following year:

> *Since the [NATS] study forecasts much more moderate future levels of traffic on the Route 101 corridor [than the Amherst Transportation Master Plan], the need for and benefits of widening the highway are not as evident as indicated in the Master Plan. On the basis of travel impact of the highway improvement and considering the fact that many other of the regional arterials are predicted to decline to a failure level in future years, it is not reasonable to assign a very high priority to the Route 101 improvement project. Therefore, the project is not included in the future recommended [regional] highway network.*

Currently, NRPC projects a year 2020 volume of 28,800 at this location for 2020. As a result, the above recommendation remains in effect. However, NRPC recognizes that, while congestion is not a serious problem along Route 101 in Amherst, safety is a concern along the undivided two-lane cross-section. A Route 101 study from Keene to Milford (Route 101/101A intersection) was funded by the NH Legislature and is now underway to address the need for identifying growth management tools, intersection improvements and correction of safety deficiencies. NRPC will continue the conduct of this study east of the defined study area on Route 101 to the Bedford town line, using its own planning funds. Recommendations will be developed for the corridor segment through Amherst by NRPC in cooperation with Town officials. It is anticipated that these recommendations will be incorporated into future Master Plan updates. #205A-5